REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed June 27, 2008. Through this response, claims 1, 5, 10, 14, 19, 23, 26, 30, 33, 37, 39, and 40 have been amended and claims 4 and 6 have been canceled without prejudice, waiver, or disclaimer. Reconsideration and allowance of the application and pending claims are respectfully requested.

I. Specification Objection

The specification has been objected to for containing various informalities. Specifically, the Office Action identifies that "...an STT..." should be changed to "... a STT..." in paragraphs [0002], [0005], [0006], [0012] (three times), [0013], [0016], [0074], [0081] (two times), [0092], [0093] and [0098].

In response to the objection, Applicants have amended the specification to paragraphs [0002], [0005], [0006], [0012] (three times), [0013], [0016], [0074], [0081] (two times), [0092], [0093] and [0098]. Although these amendments effect various changes to the specification, it is respectfully asserted that no new matter has been added. In view of these amendments, Applicants respectfully submit that the specification is not objectionable, and therefore respectfully request that the objection be withdrawn.

II. Claim Rejections - 35 U.S.C. § 102(b)

A. Statement of the Rejection

Claims 10, 12-14, 16, 18-22, 30, 32, 33, 35, 37 and 38 have been rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by *Frost et al.* (U.S. Pub. No. 2002/0039483, hereafter "*Frost*"). Applicants respectfully traverse this rejection.

B.   Discussion of the Rejection

It is axiomatic that "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(b).

In the present case, not every claimed feature is represented in the *Frost* reference. Applicants discuss the *Frost* reference and Applicants' claims in the following.

Independent Claim 10

Claim 10, as amended, recites (with emphasis added):

10. A method comprising the steps of:
    receiving a video stream;
    ***compressing the received video stream in a manner that
        varies based on one or more characteristics of the
        received video stream***; and
    recompressing the compressed video stream in a manner that is
        responsive to the availability of the computing resources.

Applicants respectfully request that the rejection of independent claim 10 be withdrawn for at least the reason that *Frost* fails to disclose, teach, or suggest at least the features recited and emphasized above in amended claim 10.

While *Frost* teaches "an instant decided by ... control parameters" (paragraph 0004), where "control parameters includes at least time and/or current storage space available in the memory" (paragraph 0005), *Frost* does not disclose or suggest "compressing the received video stream in a manner that varies based on one or more characteristics of the received video stream". Rather, *Frost* teaches that "the data is first stored ... in a compressed form to allow the quality of the data ... to be as near as possible to the quality of display" (paragraph 0008). *Frost* does not disclose or suggest

that the compression form is varied, much less varied "based on one or more characteristics of the received video stream". Further, Applicants respectfully submit that "current storage space available in the memory" (*Frost* at paragraph 0005) is not "one or more characteristics of the received video stream". Thus, *Frost* does not disclose or suggest "compressing the received video stream in a manner that varies based on one or more characteristics of the received video stream" as recited in amended claim 10.

For at least the reasons described above, *Frost* fails to disclose, teach or suggest all of the features recited in amended claim 10. Therefore, Applicants respectfully request that the rejection of claim 10 be withdrawn.

In addition, because independent claim 10 is allowable over *Frost*, dependent claims 12 and 13 are allowable as a matter of law for at least the reason that the dependent claims 12 and 13 contain all elements of their respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 12 and 13 be withdrawn.

Independent Claim 14

Claim 14, as amended, recites (with emphasis added):

14. A method comprising the steps of:
    receiving a video stream;
        ***compressing the received video stream in a manner that
            varies based on one or more characteristics of the
            received video stream***; and
        ***recompressing the compressed video stream in a manner
            that is responsive to one or more characteristics of
            the compressed video stream***.

Applicants respectfully request that the rejection of independent claim 14 be withdrawn for at least the reason that *Frost* fails to disclose, teach, or suggest at least the features recited and emphasized above in amended claim 14.

The Office Action alleges "Frost discloses ... compressing the video stream in a manner that varies based on one or more characteristics of the received video stream (Paragraphs [0004] [0005]; content is compressed based on the storage space available when the content is being processed); and recompressing the compressed video stream in a manner that is responsive to one or more characteristics of the compressed video stream (Paragraph [0008] [0016] [0017]; once the storage space is reaching it[s] capacity content may be automatically re-compressed in order to free up more storage space)" (Office Action at page 4).

Specifically, the cited paragraphs of *Frost* teach:

> [0004]   In a first aspect of the invention there is provided a method of controlling the storage of data in an electronic device, said data received by said device and said device provided with or connected to memory in which the data is to be stored, characterised in that at an instant decided by any or any combination of control parameters, a portion of said data held in the memory is selected, compressed and stored in the memory in the compressed condition.

> [0005]   Preferably the combination of control parameters includes at least time and/or current storage space available in the memory.

> [0008]   Typically, when the data is first stored in the HDD, it is stored in a compressed form to allow the quality of the data, when it is subsequently selected to generate a video display, to be as near as possible to the quality of display which would be achieved at the original scheduled time of display. In accordance with the present invention, at a time after the initial storage of the data in the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data. This frees up storage space in the HDD, which then becomes available for the subsequent storage of newly received data as and when required.

> [0016]   In accordance with the present invention, when the HDD is nearing full capacity, the receiver will inform the user of this and request the user to select one or more stored programmes from the HDD that they wish to compress or delete. In one embodiment the receiver may suggest one or more programmes to the user for compression or deletion and these suggested programmes are typically the oldest programmes stored on the HDD.

[0017]   In a preferred embodiment the receiver can be configured to autonomously select programmes for compression, thereby making the whole process invisible to the user and maximising the available processing time of the receiver.

Applicants respectfully disagree with this interpretation. To begin, Applicants respectfully submit that "current storage space available in the memory" (*Frost* at paragraph 0005) is not "one or more characteristics of the received video stream" as alleged.

Further, while *Frost* teaches "an instant decided by ... control parameters" (paragraph 0004), where "control parameters includes at least time and/or current storage space available in the memory" (paragraph 0005), *Frost* does not disclose or suggest "compressing the received video stream in a manner that varies based on one or more characteristics of the received video stream". Rather, *Frost* teaches that "the data is first stored ... in a compressed form to allow the quality of the data ... to be as near as possible to the quality of display" (paragraph 0008). *Frost* does not disclose or suggest that the compression form is varied, much less varied "based on one or more characteristics of the received video stream". Thus, *Frost* does not disclose or suggest "compressing the received video stream in a manner that varies based on one or more characteristics of the received video stream" as recited in amended claim 14.

In addition, while *Frost* teaches that "at a time after the initial storage of the data in the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data" (paragraph 0008), *Frost* does not disclose or suggest "recompressing the compressed video stream in a manner that is responsive to one or more characteristics of the compressed video stream" as recited in claim 14.

For at least the reasons described above, *Frost* fails to disclose, teach or suggest all of the features recited in amended claim 14. Therefore, Applicants respectfully request that the rejection of claim 14 be withdrawn.

Also, because independent claim 14 is allowable over *Frost*, dependent claims 16 and 18 are allowable as a matter of law for at least the reason that the dependent claims 16 and 18 contain all elements of their respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 16 and 18 be withdrawn.

Independent Claim 19

Claim 19, as amended, recites (with emphasis added):

19. A method comprising the steps of:
    monitoring consumption of computing resources over an extended
        time period;
    receiving a video stream;
    ***compressing the received video stream in a manner that
        varies based on one or more characteristics of the
        received video stream***; and
    recompressing the compressed video stream at a future time that
        is responsive to availability of computing resources at the
        future time.

Applicants respectfully request that the rejection of independent claim 19 be withdrawn for at least the reason that *Frost* fails to disclose, teach, or suggest at least the features recited and emphasized above in amended claim 19.

While *Frost* teaches that "the data is first stored ... in a compressed form to allow the quality of the data ... to be as near as possible to the quality of display" (paragraph 0008), *Frost* does not disclose or suggest that the compressed form is varied, much less varied "based on one or more characteristics of the received video stream". Thus, *Frost* does not disclose or suggest "compressing the received video stream in a manner that

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varies based on one or more characteristics of the received video stream" as recited in amended claim 19.

For at least the reasons described above, *Frost* fails to disclose, teach or suggest all of the features recited in claim 19. Therefore, Applicants respectfully request that the rejection of claim 19 be withdrawn.

In addition, because independent claim 19 is allowable over *Frost*, dependent claims 20-22 are allowable as a matter of law for at least the reason that the dependent claims 20-22 contain all elements of their respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 20-22 be withdrawn.

Independent Claim 30

Claim 30, as amended, recites (with emphasis added):

30. A set-top terminal (STT) comprising:
    an encoder configured to compress the video stream in a
        manner that varies responsive to one or more
        characteristics of the received video stream; and
    an encoder configured to recompress the compressed video
        stream in a manner that is responsive to the availability of
        computing resources, the encoders residing in the STT.

Applicants respectfully request that the rejection of independent claim 30 be withdrawn for at least the reason that *Frost* fails to disclose, teach, or suggest at least the features recited and emphasized above in amended claim 30.

While *Frost* teaches "an instant decided by ... control parameters" (paragraph 0004), where "control parameters includes at least time and/or current storage space available in the memory" (paragraph 0005), *Frost* does not disclose or suggest "compress[ing] the video stream in a manner that varies responsive to one or more characteristics of the received video stream". Rather, *Frost* teaches that "the data is first

stored ... in a compressed form to allow the quality of the data ... to be as near as possible to the quality of display" (paragraph 0008). *Frost* does not disclose or suggest that the compression form is varied, much less varied "responsive to the availability of computing resources". Thus, *Frost* does not disclose or suggest "an encoder configured to compress the video stream in a manner that varies responsive to one or more characteristics of the received video stream" as recited in amended claim 30.

For at least the reasons described above, *Frost* fails to disclose, teach or suggest all of the features recited in amended claim 30. Therefore, Applicants respectfully request that the rejection of claim 30 be withdrawn.

In addition, because independent claim 30 is allowable over *Frost*, dependent claim 32 is allowable as a matter of law for at least the reason that the dependent claim 32 contains all elements of its respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claim 32 be withdrawn.

Independent Claim 33

Claim 33, as amended, recites (with emphasis added):

33. A set-top terminal (STT) comprising:
    an encoder configured to compress a video stream in a manner that varies responsive to one or more characteristics of the received video stream; and
    an encoder configured to recompress the compressed video stream in a manner that is responsive to one or more characteristics of the compressed video stream, the encoders residing in the STT.

Applicants respectfully request that the rejection of independent claim 33 be withdrawn for at least the reason that *Frost* fails to disclose, teach, or suggest at least the features recited and emphasized above in amended claim 33.

The Office Action alleges "Frost discloses ... an encoder configured to compress a video stream in a manner that is responsive to one or more characteristics of the received video stream (Paragraphs [0004] [0005]; content is compressed based on the storage space available when the content is being processed); and an encoder configured to recompress the compressed video stream in a manner that is responsive to one or more characteristics of the compressed video stream (Paragraph [0008] [0016] [0017]; once the storage space is reaching it[s] capacity content may be automatically re-compressed in order to free up more storage space)" (Office Action at pages 6-7). Applicants respectfully disagree with this interpretation.

To begin, Applicants respectfully submit that "current storage space available in the memory" (*Frost* at paragraph 0005) is not "one or more characteristics of the received video stream" as alleged.

Further, while *Frost* teaches "an instant decided by ... control parameters" (paragraph 0004), where "control parameters includes at least time and/or current storage space available in the memory" (paragraph 0005), *Frost* does not disclose or suggest "compress[ing] a video stream in a manner that varies responsive to one or more characteristics of the received video stream". Rather, *Frost* teaches that "the data is first stored ... in a compressed form to allow the quality of the data ... to be as near as possible to the quality of display" (paragraph 0008). *Frost* does not disclose or suggest that the compression form is varied, much less varied "responsive to one or more characteristics of the received video stream". Thus, *Frost* does not disclose or suggest "an encoder configured to compress a video stream in a manner that varies responsive to one or more characteristics of the received video stream" as recited in amended claim 33.

In addition, while *Frost* teaches that "at a time after the initial storage of the data in the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data" (paragraph 0008), *Frost* does not disclose or suggest "recompress[ing] the compressed video stream in a manner that is responsive to one or more characteristics of the compressed video stream". Thus, *Frost* does not teach or suggest "an encoder configured to recompress the compressed video stream in a manner that is responsive to one or more characteristics of the compressed video stream" as recited in claim 33.

For at least the reasons described above, *Frost* fails to disclose, teach or suggest all of the features recited in amended claim 33. Therefore, Applicants respectfully request that the rejection of claim 33 be withdrawn.

Also, because independent claim 33 is allowable over *Frost*, dependent claim 35 is allowable as a matter of law for at least the reason that the dependent claim 35 contains all elements of its respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claim 35 be withdrawn.

Independent Claim 37

Claim 37, as amended, recites (with emphasis added):

37. A set-top terminal (STT) comprising:
      a module configured to monitor consumption of computing
           resources over an extended time period;
      an encoder configured to compress a video stream
           compressing the video stream in a manner that varies
           based on one or more characteristics of the received
           video stream; and
      an encoder configured to recompress the compressed video
           stream at a future time that is responsive to availability of
           computing resources at the future time.

While *Frost* teaches that "the data is first stored ... in a compressed form to allow the quality of the data ... to be as near as possible to the quality of display" (paragraph 0008), *Frost* does not disclose or suggest that the compressed form is varied, much less varied "based on one or more characteristics of the received video stream". Thus, *Frost* does not disclose or suggest "an encoder configured to compress a video stream compressing the video stream in a manner that varies based on one or more characteristics of the received video stream" as recited in claim 37.

For at least the reasons described above, *Frost* fails to disclose, teach or suggest all of the features recited in amended claim 37. Therefore, Applicants respectfully request that the rejection of claim 37 be withdrawn.

In addition, because independent claim 37 is allowable over *Frost*, dependent claim 38 is allowable as a matter of law for at least the reason that the dependent claim 38 contains all elements of their respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claim 38 be withdrawn.

III.   **Claim Rejections - 35 U.S.C. § 103(a)**

   A.   **Statement of the Rejections**

   Claims 1-3, 5, 7-9, 11, 15, 17, 23, 24, 26, 28, 29, 31, 34, 36 and 39 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Frost* in view of *Boston et al.* (U.S. Pub. No. 2007/0286581, hereafter "*Boston*"). Claims 25, 27 and 40 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Frost* in view of *Boston* and further in view of *Mori et al.* (U.S. Pat. No. 6,931,064, hereafter "*Mori*"). Applicants respectfully traverse these rejections.

B.   Discussion of the Rejections

The M.P.E.P. § 2100-116 states:

> Office policy is to follow *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), in the consideration and determination of obviousness under 35 U.S.C. 103. . . the four factual inquires enunciated therein as a background for determining obviousness are as follows:
>
> (A) Determining the scope and contents of the prior art;
> (B) Ascertaining the differences between the prior art and the claims in issue;
> (C) Resolving the level of ordinary skill in the pertinent art; and
> (D) Evaluating evidence of secondary considerations.

In the present case, it is respectfully submitted that a *prima facie* case for obviousness

is not established using the art of record.

Independent Claim 1

Claim 1, as amended, recites (with emphasis added):

> 1. A method comprising the steps of:
>   encoding a video stream in a first compressed format;
>   storing the video stream encoded in the first compressed format in a storage device;
>   retrieving the video stream encoded in the first compressed format from the storage device;
>   decoding the video stream encoded in the first compressed format;
>   ***encoding the decoded video stream in a second compressed format, the second compressed format determined based on one or more characteristics of the video stream***, wherein the first compressed format is a format of lesser computational complexity than the second compressed format; and
>   storing the video stream encoded in the second compressed format in the storage device.

Applicants respectfully request that the rejection of independent claim 1 be withdrawn

for at least the reason that *Frost* in view of *Boston* fails to disclose, teach, or suggest at

least the features recited and emphasized above in amended claim 1.

The Office Action alleges "Frost discloses ... encoding the decoded video stream

in a second compressed format, wherein the first compressed format is a format of

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lesser computational complexity than the second compressed format (Paragraphs [0008] and [0010]; the previously compressed content is re-compressed into a lower bit rate in order to free up more storage space)" (Office Action at page 8). Specifically, the cited paragraphs of *Frost* teach:

> [0008]   Typically, when the data is first stored in the HDD, it is stored in a compressed form to allow the quality of the data, when it is subsequently selected to generate a video display, to be as near as possible to the quality of display which would be achieved at the original scheduled time of display. In accordance with the present invention, at a time after the initial storage of the data in the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data. This frees up storage space in the HDD, which then becomes available for the subsequent storage of newly received data as and when required.
>
> [0010]   Preferably selected programmes recorded on a PVR/broadcast data receiver/DVD player will be recompressed during times when the device is not performing any other function or primary operational function. These selected programmes can be recompressed at a lower bit rate than when originally recorded, thereby freeing up some storage space in the device.

While *Frost* teaches that "at a time after the initial storage of the data in the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data" (paragraph 0008), *Frost* does not disclose or suggest "encoding the decoded video stream in a second compressed format, the second compressed format determined based on one or more characteristics of the video stream" as recited in amended claim 1. Further, Applicants respectfully submit that "storage space available <u>in the memory</u>" (*Frost* at paragraph 0005) is not "one or more characteristics <u>of the decompressed video stream</u>".

The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "encoding the decoded video stream in a second compressed format, the

second compressed format determined based on one or more characteristics of the video stream" as recited in amended claim 1.

For at least the reasons described above, *Frost* in view of *Boston* fails to disclose, teach or suggest all of the features recited in amended claim 1. Therefore, Applicants respectfully request that the rejection of claim 1 be withdrawn.

In addition, because independent claim 1 is allowable over *Frost* and *Boston*, dependent claims 2 and 3 are allowable as a matter of law for at least the reason that the dependent claims 2 and 3 contain all elements of their respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 2 and 3 be withdrawn.

Independent Claim 5

Claim 5, as amended, recites (with emphasis added):

5. A method comprising the steps of:
    encoding a video stream such that the video stream has a first bit-rate;
    storing the video stream having the first bit-rate in a storage device;
    retrieving the video stream having the first bit-rate from the storage device;
    decoding the video stream having the first bit-rate;
    encoding the decoded video stream such that the decoded video stream has a second bit-rate that is lower than the first bit-rate, the second bit-rate based on one or more characteristics of the decoded video stream; and
    storing the video stream having the second bit-rate in the storage device, wherein the method is implemented entirely by a television set-top terminal.

Applicants respectfully request that the rejection of independent claim 5 be withdrawn for at least the reason that *Frost* in view of *Boston* fails to disclose, teach, or suggest at least the features recited and emphasized above in amended claim 5.

The Office Action alleges "Frost discloses ... encoding the decoded video stream such that the decoded video stream has a second bit-rate that is lower than the first bit-rate (Paragraphs [0008] and [0010]; the previously compressed content is re-compressed into a lower bit rate in order to free up more storage space)" (Office Action at page 10).

While *Frost* teaches that "at a time after the initial storage of the data in the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data" (paragraph 0008), *Frost* does not disclose or suggest "encoding the decoded video stream such that the decoded video stream has a second bit-rate that is lower than the first bit-rate, the second bit-rate based on one or more characteristics of the decoded video stream" as recited in amended claim 5. Further, Applicants respectfully submit that "storage space available in the memory" (*Frost* at paragraph 0005) is not "one or more characteristics of the decompressed video stream".

The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "encoding the decoded video stream such that the decoded video stream has a second bit-rate that is lower than the first bit-rate, the second bit-rate based on one or more characteristics of the decoded video stream" as recited in amended claim 5.

For at least the reasons described above, *Frost* in view of *Boston* fails to disclose, teach or suggest all of the features recited in amended claim 5. Therefore, Applicants respectfully request that the rejection of claim 5 be withdrawn.

In addition, because independent claim 5 is allowable over *Frost* and *Boston*, dependent claims 7-9 are allowable as a matter of law for at least the reason that the dependent claims 7-9 contain all elements of their respective base claim. See, *e.g.*, *In re*

Fine, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 7-9 be withdrawn.

Dependent Claim 11

As is identified above in reference to independent claim 10, *Frost* does not teach or suggest "compressing the received video stream in a manner that varies based on one or more characteristics of the received video stream". The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "compressing the received video stream in a manner that varies based on one or more characteristics of the received video stream" as recited in claim 10. In that *Boston* does not remedy this deficiency of the *Frost* reference, Applicants respectfully submit that claim 11, which depends from claim 10, is allowable over the combination of *Frost* and *Boston* for at least the same reasons that claim 10 is allowable over *Frost* and *Boston*. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claim 11 be withdrawn.

Dependent Claims 15 and 17

As is identified above in reference to independent claim 14, *Frost* does not teach or suggest "compressing the received video stream in a manner that varies based on one or more characteristics of the received video stream". The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "compressing the received video stream in a manner that varies based on one or more characteristics of the received video stream" as recited in claim 14. In that *Boston* does not remedy this

deficiency of the *Frost* reference, Applicants respectfully submit that claims 15 and 17, which depend from claim 14, are allowable over the combination of *Frost* and *Boston* for at least the same reasons that claim 14 is allowable over *Frost* and *Boston*. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 15 and 17 be withdrawn.

Independent Claim 23

Claim 23, as amended, recites (with emphasis added):

23. A set-top terminal (STT) comprising:
  an encoder configured to compress a video stream in a first
    compressed format;
  a decoder configured to decompress the video stream encoded in
    the first compressed format; and
  an encoder configured to re-compress the decompressed
    video stream in a second compressed format
    responsive to one or more characteristics of the
    compressed video stream, the encoders configured to
    compress and re-compress and the decoder residing in
    the STT.

Applicants respectfully request that the rejection of independent claim 23 be withdrawn for at least the reason that *Frost* fails to disclose, teach, or suggest at least the features recited and emphasized above in amended claim 23.

The Office Action alleges "Frost discloses ... an encoder configured to re-compress the decompressed video stream in a second compressed format (Paragraphs [0008] and [0010]; the previously compressed content is re-compressed into a lower bit rate in order to free up more storage space)" (Office Action at page 14). Specifically, the cited paragraphs of *Frost* teach:

> [0008] Typically, when the data is first stored in the HDD, it is stored in a compressed form to allow the quality of the data, when it is subsequently selected to generate a video display, to be as near as possible to the quality of display which would be achieved at the original scheduled time of display. In accordance with the present invention, at a time after the initial storage of the data in

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the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data. This frees up storage space in the HDD, which then becomes available for the subsequent storage of newly received data as and when required.

[0010] Preferably selected programmes recorded on a PVR/broadcast data receiver/DVD player will be recompressed during times when the device is not performing any other function or primary operational function. These selected programmes can be recompressed at a lower bit rate than when originally recorded, thereby freeing up some storage space in the device.

While *Frost* teaches that "at a time after the initial storage of the data in the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data" (paragraph 0008), *Frost* does not disclose or suggest "re-compress[ing] the decompressed video stream in a second compressed format responsive to one or more characteristics of the compressed video stream" as recited in amended claim 23. Further, Applicants respectfully submit that "storage space available in the memory" (*Frost* at paragraph 0005) is not "one or more characteristics of the compressed video stream". Thus, Frost does not teach or suggest "an encoder configured to re-compress the decompressed video stream in a second compressed format responsive to one or more characteristics of the compressed video stream" as recited in amended claim 23.

The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "an encoder configured to re-compress the decompressed video stream in a second compressed format responsive to one or more characteristics of the compressed video stream" as recited in claim 23.

For at least the reasons described above, *Frost* in view of *Boston* fails to disclose, teach or suggest all of the features recited in amended claim 23. Therefore, Applicants respectfully request that the rejection of claim 23 be withdrawn.

In addition, because independent claim 23 is allowable over *Frost* and *Boston*, dependent claim 24 is allowable as a matter of law for at least the reason that the dependent claim 24 contains all elements of their respective base claim. See, *e.g., In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claim 24 be withdrawn.

Independent Claim 26

Claim 26, as amended, recites (with emphasis added):

26. A set-top terminal (STT) comprising:
    an encoder configured to compress a video stream such that the
        video stream has a first bit-rate;
    a decoder configured to decompress the video stream having the
        first bit-rate; and
    ***an encoder configured to re-compress the decoded video
        stream such that the recompressed video stream has
        a second bit-rate that is lower than the first bit-rate,
        the second bit-rate based on one or more
        characteristics of the decoded video stream***, the
        encoders configured to compress and re-compress and
        the decoder residing in the STT.

Applicants respectfully request that the rejection of independent claim 26 be withdrawn for at least the reason that *Frost* in view of *Boston* fails to disclose, teach, or suggest at least the features recited and emphasized above in amended claim 26.

The Office Action alleges "Frost discloses ... an encoder configured to re-compress the decoded video stream such that the recompressed video stream has a second bit-rate that is lower than the first bit-rate (Paragraphs [0008] and [0010]; the previously compressed content is re-compressed into a lower bit rate in order to free up more storage space)" (Office Action at page 15).

While *Frost* teaches that "at a time after the initial storage of the data in the HDD, portions of data are selected and then compressed again, thereby reducing the storage space taken up by that portion of data" (paragraph 0008), *Frost* does not

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disclose or suggest "re-compress[ing] the decoded video stream such that the recompressed video stream has a second bit-rate that is lower than the first bit-rate, the second bit-rate based on one or more characteristics of the decoded video stream" as recited in amended claim 26. Further, Applicants respectfully submit that "storage space available in the memory" (*Frost* at paragraph 0005) is not "one or more characteristics of the decoded video stream". Thus, Frost does not teach or suggest "an encoder configured to re-compress the decoded video stream such that the recompressed video stream has a second bit-rate that is lower than the first bit-rate, the second bit-rate based on one or more characteristics of the decoded video stream" as recited in amended claim 26.

The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "an encoder configured to re-compress the decoded video stream such that the recompressed video stream has a second bit-rate that is lower than the first bit-rate, the second bit-rate based on one or more characteristics of the decoded video stream" as recited in claim 26.

For at least the reasons described above, *Frost* in view of *Boston* fails to disclose, teach or suggest all of the features recited in claim 26. Therefore, Applicants respectfully request that the rejection of claim 26 be withdrawn.

Because independent claim 26 is allowable over *Frost* and *Boston*, dependent claims 28 and 29 are allowable as a matter of law for at least the reason that the dependent claims 28 and 29 contain all elements of their respective base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 28 and 29 be withdrawn.

Dependent Claim 31

As is identified above in reference to independent claim 30, *Frost* does not teach or suggest "an encoder configured to compress the video stream in a manner that varies responsive to one or more characteristics of the received video stream". The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "an encoder configured to compress the video stream in a manner that varies responsive to one or more characteristics of the received video stream" as recited in claim 30. In that *Boston* does not remedy this deficiency of the *Frost* reference, Applicants respectfully submit that claim 31, which depends from claim 30, is allowable over the combination of *Frost* and *Boston* for at least the same reasons that claim 30 is allowable over *Frost* and *Boston*. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claim 31 be withdrawn.

Dependent Claims 34 and 36

As is identified above in reference to independent claim 33, *Frost* does not teach or suggest "an encoder configured to compress a video stream in a manner that varies responsive to one or more characteristics of the received video stream". The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "an encoder configured to compress a video stream in a manner that varies responsive to one or more characteristics of the received video stream" as recited in claim 33. In that *Boston* does not remedy this deficiency of the *Frost* reference, Applicants respectfully submit that claims 34 and 36, which depend from claim 33, are allowable over the combination of *Frost* and *Boston* for at least the same reasons that claim 33 is allowable

over *Frost* and *Boston*. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore,

Applicants respectfully request that the rejection of claims 34 and 36 be withdrawn.

Independent Claim 39

Claim 39, as amended, recites (with emphasis added):

39. A method comprising the steps of:
    storing a video presentation having a first compression format;
    transcoding a first portion of the video presentation such
        that the first portion has a second compression format
        while a second portion remains in the first
        compression format, the second compression format
        responsive to one or more characteristics of the
        compressed video presentation;
    decoding the first portion having the second compression format;
    providing the first portion to a user;
    decoding the second portion having the first compression format;
        and
    providing the second portion to the user.

Applicants respectfully request that the rejection of independent claim 39 be withdrawn

for at least the reason that *Frost* in view of *Boston* fails to disclose, teach, or suggest at

least the features recited and emphasized above in amended claim 39.

The Office Action acknowledges that "Frost fails to explicitly disclose transcoding a

first portion of the video presentation such that the first portion has a second

compression format while a second portion remains in the first compression format"

(Office Action at page 17). The Office Action then alleges "Boston discloses transcoding

a first portion of the video presentation such that the first portion has a second

compression format while a second portion remains in the first compression format

(Paragraphs [0288] – [0291] figs 38 and 39)" (Office Action at page 18). Specifically,

the cited paragraphs of *Boston* teach:

> [0288]   FIG. 39 depicts a more detailed exemplary method of
> increasing 3806 a show's compression level during recording.
> The method of FIG. 39 includes recording 3800 a show includes
> encoding 3902 a video stream 3922 through a codec (not shown)

to a first video file 3906. The encoding 3902 is carried out in dependence upon values of factors affecting compression level, that is, in dependence upon codec operating parameters 3904. In the method of FIG. 39, increasing 3806 the show's compression level includes closing 3908 the first video file 3906, opening 3910 a second video file 3923, and changing 3912 the values of the codec operating parameters 3904, thereby changing the compression level of the second video file with respect to the first video file.

[0289]   More particularly, the codec operating parameters are changed so as to increase the compression level. Again with reference to FIG. 10b, consider an example in which the first video file is encoded with codec operating parameters that effect the compression level identified by record 606 in table 602. That is, the codec is an MPEG codec set to encode an MPEG-2 video file having a frame rate of 30 frames per second, a resolution of 352×240, and so on, all resulting in a compression level of 320:1 with respect to raw NTSC video. Changing 3912 the values of the codec operating parameters 3904 to increase the compression level from 320 to 1280 then includes calling the codec API with the new operating parameters of record 608, that is, in this example, changing the resolution to 180×120.

[0290]   The method of FIG. 39 includes calling the codec API with a filename for the second video file, thereby redirecting 3914 the video stream 3922 to the second video file 3923. The method also includes closing 3916 the second video file 3923 at the end of the show and further compressing 3918 the first video file 3906 to the compression level of the second video file. The first video file 3906 is stored at its original compression level. If the show as a whole is to be effectively compressed so that it can be decoded for display through a single codec, it is useful to convert the entire show, including the first portion of the show stored in the first video file to the new higher compression level of the second video file.

[0291]   Alternatively, it is possible within the scope of the present invention to leave a single show fragmented among more than one video file, each video file having different encoding parameters. PVRs implementing this alternative then would need to expand the data structures representing shows (see FIG. 3) to include file-related information, such as file name and compression level, for each file comprising a show. Such PVRs will need to be programmed to change files, change parameters, and perhaps even change codecs to decode, during display, a show comprising more than one video file.

While *Frost* teaches "increasing 3806 a show's compression level during recording" (paragraph 0288) where "the codec operating parameters are changed so as

to increase the compression level" (paragraph 0289), *Frost* does not disclose or suggest "transcoding a first portion of the video presentation such that the first portion has a second compression format while a second portion remains in the first compression format, the second compression format responsive to one or more characteristics of the compressed video presentation" as recited in amended claim 39.

The addition of *Boston* does not overcome this limitation. While *Boston* teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not disclose or suggest "transcoding a first portion of the video presentation such that the first portion has a second compression format while a second portion remains in the first compression format, the second compression format responsive to one or more characteristics of the compressed video presentation" as recited in claim 39.

For at least the reasons described above, *Frost* in view of *Boston* fails to disclose, teach or suggest all of the features recited in amended claim 39. Therefore, Applicants respectfully request that the rejection of claim 39 be withdrawn.

Dependent Claim 25

As is identified above in reference to independent claim 23, *Frost* in view of *Boston* does not teach or suggest "an encoder configured to re-compress the decompressed video stream in a second compressed format responsive to one or more characteristics of the compressed video stream". The addition of *Mori* does not overcome this limitation. While *Mori* teaches "converting motion picture data in the MPEG-2 format to motion picture data in the MPEG-4 format" (col. 1, lines 6-9), *Mori* does not disclose or suggest "an encoder configured to re-compress the decompressed video stream in a second compressed format responsive to one or more characteristics of the compressed video stream" as recited in claim 23. In that *Mori* does not remedy this deficiency of the *Frost*

and *Boston* references, Applicants respectfully submit that claim 25, which depends from claim 23, is allowable over the combination of *Frost*, *Boston*, and *Mori* for at least the same reasons that claim 23 is allowable over *Frost*, *Boston*, and *Mori*. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claim 25 be withdrawn.

Dependent Claim 27

As is identified above in reference to independent claim 26, *Frost* in view of *Boston* does not teach or suggest "an encoder configured to re-compress the decoded video stream such that the recompressed video stream has a second bit-rate that is lower than the first bit-rate, the second bit-rate based on one or more characteristics of the decoded video stream". The addition of *Mori* does not overcome this limitation. While *Mori* teaches "converting motion picture data in the MPEG-2 format to motion picture data in the MPEG-4 format" (col. 1, lines 6-9), *Mori* does not disclose or suggest "an encoder configured to re-compress the decoded video stream such that the recompressed video stream has a second bit-rate that is lower than the first bit-rate, the second bit-rate based on one or more characteristics of the decoded video stream" as recited in claim 26. In that *Mori* does not remedy this deficiency of the *Frost* and *Boston* references, Applicants respectfully submit that claim 27, which depends from claim 26, is allowable over the combination of *Frost*, *Boston*, and *Mori* for at least the same reasons that claim 26 is allowable over *Frost*, *Boston*, and *Mori*. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claim 27 be withdrawn.

Independent Claim 40

Claim 40, as amended, recites (with emphasis added):

40. A method implemented by a television set-top terminal, comprising
the steps of:
*encoding a video stream in a first compressed format, where
the first compressed format varies based on one or
more characteristics of the video stream*;
storing the video stream encoded in the first compressed format
in a storage device;
retrieving the video stream encoded in the first compressed
format from the storage device;
decoding the video stream encoded in the first compressed
format;
encoding the decoded video stream in a second compressed
format; and
storing the video stream encoded in the second compressed
format in the storage device;
wherein the first compressed format is an MPEG-2 format and the
second compressed format is an H.264 format; and
wherein the second compressed format enables a higher
compression rate than the first compressed format.

Applicants respectfully request that the rejection of independent claim 40 be withdrawn

for at least the reason that *Frost* in view of *Boston* in further view of *Mori* fails to disclose,

teach, or suggest at least the features recited and emphasized above in amended claim

40.

While *Frost* teaches that "the data is first stored ... in a compressed form to allow

the quality of the data ... to be as near as possible to the quality of display" (paragraph

0008), *Frost* does not disclose or suggest that the compressed form is varied, much less

varied "based on one or more characteristics of the received video stream". Thus, *Frost*

does not disclose or suggest "encoding a video stream in a first compressed format,

where the first compressed format varies based on one or more characteristics of the

video stream" as recited in amended claim 40.

The addition of *Boston* and *Mori* does not overcome this limitation. While *Boston*

teaches "further compressing 3508 a recorded show" (paragraph 0281), *Boston* does not

disclose or suggest "encoding a video stream in a first compressed format, where the first compressed format varies based on one or more characteristics of the video stream" as recited in amended claim 40. Also, while *Mori* teaches "converting motion picture data in the MPEG-2 format to motion picture data in the MPEG-4 format" (col. 1, lines 6-9), *Mori* does not disclose or suggest "encoding a video stream in a first compressed format, where the first compressed format varies based on one or more characteristics of the video stream" as recited in claim 40.

For at least the reasons described above, *Frost* in view of *Boston* in further view of *Mori* fails to disclose, teach or suggest all of the features recited in amended claim 40. Therefore, Applicants respectfully request that the rejection of claim 40 be withdrawn.

CONCLUSION

Applicants respectfully submit that Applicants' pending claims are in condition for allowance. Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, and similarly interpreted statements, should not be considered well known since the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,

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